Kary L. Myers

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Professional Experience

Los Alamos National Laboratory, Los Alamos, New Mexico
Scientist, Statistical Sciences Group, 2006-present.

WhizBang! Labs Research, Pittsburgh, Pennsylvania
Graduate Research Intern, 2001.

AT&T Shannon Labs, Florham Park, New Jersey
Graduate Research Intern, Artificial Intelligence Department, 1999 and 2000.

Education

Carnegie Mellon University, Pittsburgh, Pennsylvania
Ph.D., Statistics, May 2006.
Thesis: Developing Models to Reveal Brain Activation in Massive Neuroimaging Datasets

M.S., Machine Learning, May 2002.
Master's project: A Boosting Approach to Topic Spotting on Subdialogues

B.S. with University and College Honors, Statistics (Computer Science Minor), May 1999.
Honors thesis: Finding Galactic Clusters in Massive Astrophysical Datasets

Honors and Awards

- Los Alamos Program Achievement Award, 2007.
- AT&T Labs Fellowship, 1999-2005.
- Outstanding Reviewer Award, American College of Gastroenterology, 2004
- Student Paper Competition Winner, Statistical Computing and Graphics Sections of the American Statistical Association, 2004.
- Student Scholarship, Spring Research Conference on Statistics in Industry and Technology, 2004 and 2005.
- Carnegie Scholars Program Fellowship, 1999-2003.
- Election to Phi Beta Kappa, Phi Kappa Phi, and Sigma Xi, 1999.
- Richard Schoenwald Phi Beta Kappa Undergraduate Research Prize, 1999.
- Lucent Technologies First Prize, Sigma Xi Undergraduate Research Competition, 1999.

Refereed Publications

N. Pawley, **K. Myers**, J. Galbraith, and S. Brumby. Capturing Dynamics on Multiple Time Scales: A Hybrid Approach for Cluttered Electromagnetic Data. *43rd Asilomar Conference on Signals, Systems, and Computers*, November 2009.

T. Burr and **K. Myers**. Effects of background suppression of gamma counts on signal estimation. *Applied Radiation and Isotopes*, **67**, 1729-1737, 2009.

T. Burr and **K. Myers**. Signatures for several types of naturally occurring radioactive material. *Applied Radiation and Isotopes*, **66**, 1250-1261, 2008.

K.L. Myers, A.E. Brockwell, and W.F. Eddy. State-space models for optical imaging. *Statistics in Medicine*, **26**, 3862-3874, 2007.

T. Burr, J.R. Gattiker, **K. Myers**, and G. Tompkins. Alarm criteria in radiation portal monitoring. *Applied Radiation and Isotopes*, **65**, 569-580, 2007.

K. Myers. The billion byte brain: Combining physiological data and gigabytes of images to improve maps of brain activity. *2004 Proceedings of the American Statistical Association.*
•*ASA Statistical Computing and Graphics Sections Student Paper Competition winner*

K. Myers, M. Kearns, S. Singh, and M.A. Walker. A Boosting Approach to Topic Spotting on Subdialogues. *Proceedings of the Seventeenth International Conference on Machine Learning*, 655-662, 2000.

Other Articles

K. Myers. Strategies for pursuing graduate school fellowships. *International Society for Bayesian Analysis Bulletin*, **15**(2), 2008.

W.F. Eddy, R. McNamee, and **K.L. Myers**. Imaging the living brain. *CHANCE*, **20**(4), 2007.

K.L. Myers. Review of *A Kalman Filter Primer* by R.L. Eubank. *Journal of the American Statistical Association*, **102**, 384-384, 2007.

Selected Invited Presentations

Same or Different? Identifying Similarities and Computing Distances Between Images. Joint Statistical Meetings, Washington, DC, August 2009.

Learning from Neuroscience Data (with Rob Kass). Summer Workshop in Neuroimaging, Center for the Neural Basis of Cognition, Pittsburgh, Pennsylvania, June 2007.

Developing Models to Reveal Brain Activation in Massive Neuroimaging Datasets. Spring Research Conference on Statistics in Industry and Technology, Park City, Utah. June 2005.

Revealing Brain Activity with Filters. ENAR Spring Meeting, Austin, Texas. March 2005.

Developing Models to Reveal Brain Activation in Massive Neuroimaging Datasets. University of Texas Southwestern Medical Center. January 2005.

Brains on Film: Using Optical Imaging to Build Maps of Brain Activity. Interface 2004, Baltimore, Maryland. May 2004.

The Billion Byte Brain: Combining Physiological Data and Gigabytes of Images to Improve Maps of Brain Activity. Invited talk, Center for Automated Learning and Discovery Research Day, Carnegie Mellon University. February 2004.

The Progression of Occupational Asthma: Assessing Data Quality for Studying Changes in Nasal Airway Volume Via Magnetic Resonance Imaging of Mice. Talk for the Advanced Data Analysis Qualifying Exam, Statistics Department, Carnegie Mellon University. December 2002.

And the Winner Is... Extracting Information from Sports Recaps. Student research talk, WhizBang! Labs Research, Pittsburgh, Pennsylvania. July 2001.

Who Is John Galt? Machine Learning for Extraction of Biographies from Text. Student research talk, AT&T Shannon Labs, Florham Park, New Jersey. August 2000.

Finding Galactic Clusters in Massive Astrophysical Datasets. Center for Automated Learning and Discovery Corporate Members Meeting, Carnegie Mellon University. November 1999.

Graduate Research

Making Maps of Brain Activation with Optical Imaging Data
Carnegie Mellon University, 2003-2006
• Advisors: William F. Eddy, Seong-Gi Kim
Thesis research. Identifying and modeling physiological and instrumental sources of noise in optical imaging data in order to make better maps of brain activity.

Magnetic Resonance Imaging for Studying Changes in Nasal Airway Volume
Carnegie Mellon University, Spring-Fall 2002
• Advisors: Nicole Lazar, William E. Brown
Identified areas for improving experimental design and magnetic resonance imaging technique in a study of mice exposed to isocyanates.

Maximum Entropy Markov Models for Part-of-Speech Tagging
WhizBang! Labs Research, Summer 2001
• Advisor: Fernando Pereira
Wrote software using maximum entropy Markov models (McCallum et al., 2000) to assign part-of-speech tags to words in a body of text.

Machine Learning for Extraction of Biographies from Text
AT&T Shannon Labs, Summer 2000
• Advisors: Michael Collins, Steve Abney
Explored the task of augmenting a question answering system, Io (`www.ionaut.com`), with a means of identifying descriptive text that could answer "Who is X?"

A Boosting Approach to Topic Spotting
AT&T Shannon Labs, Summer 1999
• Advisors: Michael Kearns, Satinder Singh, Marilyn A. Walker
Examined ways of using BoosTexter (Schapire & Singer, 2000) with the Switchboard corpus of spontaneous speech to develop an end-to-end system for a topic spotting task.

Undergraduate Research

Finding Galactic Clusters in Massive Astrophysical Datasets
Carnegie Mellon University, Fall 1998-Spring 1999
• Advisors: Andrew Moore, Larry Wasserman
Senior honors thesis. Worked with a team of astrophysicists, statisticians, and computer scientists to develop technologies for real-time clustering of galactic data from the new generation of digital sky surveys. Applied cluster analysis techniques and the EM algorithm to identify and characterize clusters of galaxies.

Probabilistic Robotic Search for Landmines
Carnegie Mellon University, Summer 1998
• Advisors: Howie Choset, Stephanie Land
Developed probabilistic methods to guide a robotic search of a landmine field, incorporating sensor input and pre-existing knowledge of minefield patterns.

Causal Inference in Clinical Data
University of Pittsburgh and Carnegie Mellon University, Summer 1998
• Advisors: Greg Cooper, Brian Junker, Larry Wasserman
Explored causal relationships between clinical actions and outcomes among patients with community-acquired pneumonia. Wrote software to automate methods for computing probabilities of counterfactual queries (e.g., "If the patient had been treated at home, would he or she have survived?").

Activities and Service

• **Program Chair**, Council of Chapters, American Statistical Association, 2010.
• **Program Chair Elect**, Section on Physical and Engineering Sciences, American Statistical Association, 2010.
• **Editor**, *CHANCE* magazine, 2010.
• **Member**, Student Award Selection Committee, Section on Bayesian Statistical Science, 2009.
• **Peer reviewer**, National Institutes of Health: Infectious, Reproductive, Asthma, and Pulmonary (IRAP) and Neurological, Aging and Musculoskeletal Epidemiology (NAME) Study Sections, 2008.
• **Reviewer**, *Technometrics* (2009), *Journal of Computational Neuroscience* (2009), *American Journal of Gastroenterology* (2004).
• **Workshop instructor**, Expanding Your Horizons Los Alamos, 2008.
• **Co-chair**, Quality and Productivity Research Conference, 2007.
• **Organizer**, Special Award of the ASA, Intel International Science & Engineering Fair, 2007.
• **Invited session organizer and chair**, Joint Statistical Meetings, 2006.
• **Invited session chair**, International Biometric Society, Eastern North American Region, 2005.

Professional Memberships

• American Statistical Association
• Sigma Xi Scientific Research Society
• Phi Beta Kappa
• Phi Kappa Phi

Computing Skills

Statistical Software and Tools: R, S-PLUS, FIASCO; some SAS, Minitab, and SPSS.
Languages: C++, C, Java, Python, Perl, MATLAB; some shell scripting.